WHAT IS CLAIMED IS:

1. A method for controlling access by a plurality of agents to a resource comprising:

for each of a plurality of agents, identifying a priority associated with the agent; and

enabling each agent to access a resource according to the priority associated with the agent.

2. The method of claim 1, wherein the agents comprise processors in a multiprocessor computing system; wherein the resource comprises a bus interconnecting the processors; and wherein enabling the agents to access the resource comprises defining a set of time slots and assigning the processors to the time slots according to a pattern based upon the priority associated with each processor.

3. The method of claim 2, further comprising, for each processor: determining whether an actual number of accesses by the processor to the bus is greater than or less than an expected number of accesses by the processor to the bus; and decreasing the priority associated with the processor if the actual number of accesses is greater than the expected number of accesses, and increasing the priority associated with the processor if the actual number of accesses is less than the expected number of accesses.

4. The method of claim 3, further comprising modifying the pattern based upon changes in the priorities associated with the processors.

5. The method of claim 3, wherein determining whether an actual number of accesses by the processor to the bus is greater than or less than an expected number of accesses by the processor to the bus comprises:

each time a command is issued to the processor bus, incrementing an issued command counter value, *i*;

each time a command is issued from the processor to the processor bus, incrementing an accumulator value by a rate counter start value, *a*;

shifting the accumulator value by a number of bits equal to a base counter value, *b*; and

subtracting the shifted accumulator value from the issued command counter value to produce a value equal to the actual number of accesses by the processor to the bus minus the expected number of accesses by the processor to the bus.

6. The method of claim 1, further comprising: maintaining at least one base counter configured to decrement from a base counter start value based upon accesses to the resource; maintaining for each agent a rate counter configured to decrement from a rate counter start value based upon accesses by the agent; allowing each agent to access the resource only if the corresponding rate counter is non-zero.

7. The method of claim 1, wherein the priority associated with each agent is initially set to a value proportional to a bandwidth request associated with the agent.

8. The method of claim 1, further comprising modifying the priorities associated with one or more of the agents.

9. The method of claim 8, further comprising, for one or more of the agents, determining whether an actual number of accesses by the agent to the resource is greater than or less than an expected number of accesses by the agent to the resource.

10. The method of claim 9, wherein modifying the priorities associated with one or more of the agents comprises, for each of the one or more agents, decreasing the priority associated with the agent if the actual number of accesses is greater than the expected number of accesses and increasing the priority associated with the agent if the actual number of accesses is less than the expected number of accesses.

11. The method of claim 1, wherein the agents comprise processors in a multiprocessor computing system; and wherein the resource comprises a bus interconnecting the processors.

12. The method of claim 1, wherein enabling the agents to access the resource comprises defining a set of time slots and assigning the agents to the time slots according to a pattern based upon the priorities associated with the agents.

13. A system comprising:

logic configured to be coupled to a resource;

wherein the logic is configured to identify a priority for each of a plurality of agents, and, for each agent, enable access to the resource in accordance with the corresponding priority.

14. The system of claim 13, wherein the agents comprise processors in a multiprocessor computing system; wherein the resource comprises a bus to which the processors are coupled; and wherein the logic is configured to enable access to the bus by defining a set of time slots and assigning the processors to the time slots according to a repeating pattern based upon the priorities associated with the processors.

15. The system of claim 14, wherein the logic is configured to: determine for each processor whether an actual number of accesses by the processor to the bus is greater than or less than an expected number of accesses by the processor to the bus; and decrease the priority associated with the processor if the actual number of accesses is greater than the expected number of accesses, and increase the priority associated with the processor if the actual number of accesses is less than the expected number of accesses.

16. The system of claim 15, wherein the logic is further configured to modify the pattern based upon changes in the priorities associated with the processors.

17. The system of claim 15, wherein the logic is configured to determine for each processor whether an actual number of accesses by the processor to the bus is greater than or less than an expected number of accesses by the processor to the bus by:

each time a command is issued to the processor bus, incrementing an issued command counter value, *i*;

each time a command is issued from the processor to the processor bus, incrementing an accumulator value by a rate counter start value, *a*;

shifting the accumulator value by a number of bits equal to a base counter value, *b*; and

subtracting the shifted accumulator value from the issued command counter value to produce a value equal to the actual number of accesses by the processor to the bus minus the expected number of accesses by the processor to the bus.

18. The system of claim 13, further comprising: at least one base counter configured to decrement from a base counter start value based upon accesses to the resource; and a rate counter for each agent configured to decrement from a rate counter start value based upon accesses by the agent.

19. The system of claim 18, wherein the logic is configured to allowing each agent to access the resource only if the corresponding rate counter is non-zero.

20. The system of claim 13, wherein the priority associated with each agent is initially set to a value proportional to a bandwidth request associated with the agent.

21. The system of claim 13, wherein the logic is configured to modify the priorities associated with one or more of the agents.

22. The system of claim 21, wherein the logic is configured to, for one or more of the agents, determine whether an actual number of accesses by the agent to the resource is greater than or less than an expected number of accesses by the agent to the resource.

23. The system of claim 22, wherein the logic is configured to, for each of the one or more agents, decrease the priority associated with the agent if the actual number of accesses is greater than the expected number of accesses and increase the priority associated with the agent if the actual number of accesses is less than the expected number of accesses.

24. The system of claim 13, wherein the agents comprise processors in a multiprocessor computing system; and wherein the resource comprises a bus interconnecting the processors.

25. The system of claim 13, wherein the logic is configured to define a set of time slots and assign the agents to the time slots according to a repeating pattern based upon the priorities associated with the agents.

26. A software product comprising a computer readable medium containing one or more instructions configured to cause a computer to perform the method comprising:

for each of a plurality of agents, identifying a priority associated with the agent; and

enabling each agent to access a resource according to the priority associated with the agent.

27. The software product of claim 26, wherein the agents comprise processors in a multiprocessor computing system; wherein the resource comprises a bus interconnecting the processors; and wherein enabling the agents to access the resource comprises defining a set of time slots and assigning the processors to the time slots according to a repeating pattern based upon the priorities associated with the processors.

28. The software product of claim 27, further comprising, for each processor: determining whether an actual number of accesses by the processor to the bus is greater than or less than an expected number of accesses by the processor to the bus; and decreasing the priority associated with the processor if the actual number of accesses is greater than the expected number of accesses, and increasing the priority associated with the processor if the actual number of accesses is less than the expected number of accesses.

29. The software product of claim 28, further comprising modifying the pattern based upon changes in the priorities associated with the processors.

30. The software product of claim 28, wherein the software product is configured to determine whether an actual number of accesses by the processor to the bus is greater than or less than an expected number of accesses by the processor to the bus by:

each time a command is issued to the processor bus, incrementing an issued command counter value, *i*;

each time a command is issued from the processor to the processor bus, incrementing an accumulator value by a rate counter start value, *a*;

shifting the accumulator value by a number of bits equal to a base counter value, *b*; and

subtracting the shifted accumulator value from the issued command counter value to produce a value equal to the actual number of accesses by the processor to the bus minus the expected number of accesses by the processor to the bus.

31. The software product of claim 26, further comprising: maintaining at least one base counter configured to decrement from a base counter start value based upon accesses to the resource; maintaining for each agent a rate counter configured to decrement from a rate counter start value based upon accesses by the agent; allowing each agent to access the resource only if the corresponding rate counter is non-zero.

32. The software product of claim 26, wherein the priority associated with each agent is initially set to a value proportional to a bandwidth request associated with the agent.

33. The software product of claim 26, further comprising modifying the priorities associated with one or more of the agents.

34. The software product of claim 33, further comprising, for one or more of the agents, determining whether an actual number of accesses by the agent to the resource is greater than or less than an expected number of accesses by the agent to the resource.

35. The software product of claim 34, wherein modifying the priorities associated with one or more of the agents comprises, for each of the one or more agents, decreasing the priority associated with the agent if the actual number of accesses is greater than the expected number of accesses and increasing the priority associated with the agent if the actual number of accesses is less than the expected number of accesses.

36. The software product of claim 26, wherein the agents comprise processors in a multiprocessor computing system; and wherein the resource comprises a bus interconnecting the processors.

37. The software product of claim 26, wherein enabling the agents to access the resource comprises defining a set of time slots and assigning the agents to the time slots according to a repeating pattern based upon the priorities associated with the agents.